

PU & FOAM TRAINING COURSES

20-21 November 2018, Johannesburg, South Africa

Venue: Sandton Convention Center

PU Tech
AFRICA 2018
FOAM EXPO

TRAINING COURSE SCHEDULE

Date	Time, hrs	Course Code	Course Title	Instructor
20 Nov'2018	10.00-12.00	PU-40	Polymer Science and Polyurethane Chemistry	Dr. Joseph Marcinko, USA
20 Nov'2018	10.00-12.00	PU-41	Polyisocyanurate (PIR) Chemistry and Technology	Dr. Grazyna Mitchener, UK
20 Nov'2018	10.00-12.00	PU-42	High Resilient Foams Processing	M Naqi, Canada
20 Nov'2018	14.00-16.00	PU-43	Use of FT-IR Techniques in Polyurethane industry	Dr. Grazyna Mitchener, UK
20 Nov'2018	14.00-16.00	PU-44	Flame Retardant Foams Processing	M Naqi, Canada
20 Nov'2018	14.00-16.00	PU-45	Adhesion Science and Polyurethane Adhesives	Dr. Joseph Marcinko, USA
21 Nov'2018	10.00-12.00	PU-46	Polyurethane Thermal Insulation Products	Dr. Grazyna Mitchener, UK
21 Nov'2018	10.00-12.00	PU-47	Overcoming Pinhole Problems on a Maxfoam	M Naqi, Canada
21 Nov'2018	10.00-12.00	PU-48	Thermal Analysis of Polymers and Polyurethanes	Dr. Joseph Marcinko, USA
21 Nov'2018	14.00-16.00	PU-49	"Agile" New Product Development (NPD) for Polyurethane Industry	Dr. Grazyna Mitchener, UK
21 Nov'2018	14.00-16.00	PU-50	Foam Core Scorching	M Naqi, Canada
21 Nov'2018	14.00-16.00	PU-51	Lignocellulosic Composite Adhesion and Isocyanate Adhesives	Dr. Joseph Marcinko, USA

Course Instructors



Dr. Grazyna Mitchener is a director and principal consultant in Polychemtech Ltd. – a technical and business consultancy specializing in innovative PIR/PUR and other polymeric products and technologies. From 1996 to 2008 she worked for Celotex (UK), developing first in Europe PIR rigid insulation products, from initial idea to full scale manufacturing. For the first ten years of her career she was an academic researcher and lecturer in Poland, where she worked on high performance, fire and heat resistant polymers. She gained her Ph.D. in Polymer Chemistry and Technology in 1992. She is the author of 8 patents, over 30 scientific papers, several conference presentations and training workshops. For her contribution to the thermal insulation industry she was presented with the "Global Insulation Personality of 2014" award.



Dr. Joseph Marcinko, is Principal Scientist and President of Polymer Synergies LLC, and Principal Scientist for BioPolymer Technologies, Ltd. Dr. Marcinko has over 30 years of industrial R&D, research management, and academic experience. His interests and expertise are in the areas of polyurethane chemistry, biopolymers, adhesion science, composite materials, polymer characterization, solid-state NMR spectroscopy, and polymer structure-property relationships. He is an adjunct professor at Cumberland County College where he teaches Physical Science, Environmental Science, and Principles of Science. He also holds a secondary education teaching certification. Dr. Marcinko has authored over 30 publications, and has 6 patents and 7 patents pending.



M. A Naqi is Principal consultant and President of LinQ Tech Inc. based in Canada. A graduate in Science I started my career as 'Production Manager' on a continuous Foaming machine at Poly Products LLC (Oman) between 1980 -2001 while directing the company from infancy to market leader in special foams, eventually became CTO in the company. During this period added a molded foam line as well as a rebonded foam line. I have developed formulations for all kinds of special foams, including soft and super soft grades with standard polyol, a unique pre-polymer dispensing system for rebonded foam which precludes cleaning of the pump and pouring tube. Started my own consultation company in 2001 assisting producers in Canada, Middle East and Asia, teaching foam production, adjusting formulations and talking at various shows and been involved in the industry for over 30 years.

Course Details

PU-40: Polymer Science and Polyurethane Chemistry

- Structure-Property Relationships in Polymers
- Structure-Property Relationships in Polyurethanes
- Isocyanate Chemistry and Manufacturing
- Polyurethane Chemistry and Characterization

PU-41: Polyisocyanurate (PIR) Chemistry and Technology

- Basic polyisocyanurate chemistry theory
- Properties of PIR products
- Differences between PUR and PIR technologies
- Specifics of PIR formulations and raw materials
- Specifics of manufacturing equipment for PIR production

PU-42: High Resilient Foams Processing

- Introduction on HR foams and their advantages.
- Chemical package
- Machine requirements
- Processing Hints and guides

PU-43: Use of FT-IR Techniques in Polyurethane Industry

- Short introduction to FT-IR theory
- Summary of available industrial grade equipment
- Applications of the techniques in the manufacturing of polyols, prepolymers, rigid foams, flexible foams, elastomers, and coatings
- Application of the technique for raw materials quality control, development, troubleshooting, and benchmarking

PU-44: Flame Retardant Foams Processing

- Introduction on flame retardant foams
- FR standards
- Chemical packages.
- Machine Requirements
- Processing Hints and guides

PU-45: Adhesion Science and Polyurethane Adhesives

- Overview of Adhesion Concepts and Mechanisms
- Mechanical Properties of Polyurethanes as Related to Adhesives
- PU Adhesive types (Non Reactive Adhesives / Reactive Adhesives)

PU-46: Polyurethane Thermal Insulation Products

- Theory of the heat transfer process
- Different thermal insulation polyurethane products, their advantages and disadvantages
- Improving thermal conductivity by optimizing polyurethane formulations
- Improving thermal conductivity by optimizing processing parameters
- Development trends in the PU thermal insulation industry

PU-47: Overcoming Pin Hole Problems on a Maxfoam

- Pin Hole problem overview
- Understanding pin holes.
- Machine issues.
- Resolving processing problems.

PU-48: Thermal Analysis of Polymers and Polyurethanes

- Thermal Analysis Instrumentation
- Experimental Considerations
- Industrial Problem Solving Using Thermal Analysis
- Case Studies

PU-49: “Agile” New Product Development (NPD) for polyurethane industry

- Principles of NPD process from an idea to full production in the PU industry
- Maximising the product lifetime profit and return on investment
- Minimising development time and cost
- Choosing an optimum PU formulation or PU product design
- Laboratory scale trial procedures
- Scaling up procedures
- Case studies

PU-50: Foam Core Scorching

- What is scorching
- Scorching related to machine
- Scorching related to formulation.
- How to prevent

PU-51: Lignocellulosic Composite Adhesion and Isocyanate Adhesives

- Types of Wood Composites
- Wood Composite Manufacturing
- Wood Adhesive Mechanisms
- Protein-Isocyanate Hybrid Adhesives



Registration Fee

75 US\$/Person/Course

How to Register?

Please download registration form at www.polyurethane-industry.org or www.urethane-expo.com and send filled registration form to training@technobiz-asia.com

Venue

Sandton Convention Center, Johannesburg, South Africa



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